UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MEMORANDUM

SUBJECT: Request for a Removal Action at the Little Bit Rad Site, Beaumont, Jefferson County, Texas

FROM: Patrick L. Hammack, Senior On-Scene Coordinator (6SF-R1)

TO: Myron Knudson, P.E., Director
Superfund Division (6SF)

THRU: Charles A. Gazda, Chief
Response and Prevention Branch (6SF-R)

I. PURPOSE

This memorandum requests approval for a Removal Action pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, 42 U.S.C. § 9604, *et seq.*, at the Little Bit Rad Site (Site) located in Beaumont, Jefferson County, Texas. The Site consists of the property where the Little Bit Wireline Services maintained a storage area for radioactive sources. The proposed action involves the excavation and off-site disposal of americium-241 contaminated soil and debris and the subsequent restoration of the property.

This action meets the criteria for initiating a removal action under the National Contingency Plan (NCP), 40 CFR § 300.415. This action is expected to require less than twelve months and less than two million dollars to complete.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS # TX0000605291
Category of removal: Time-Critical
Site ID # JD

A. Site Description

1. Removal site evaluation

The Little Bit Rad Site consists of a small storage building located on a corner lot in a residential area of Beaumont, Jefferson County, Texas (Attachment 1). In 1995, the owner of the storage shed placed a broken 3 curie americium-241/beryllium source in the shed, contaminating the area. The source has subsequently been removed leaving the residual contamination. A confounding variable is the presence of beryllium on the site. We have no analytical information confirming its presence due to the high radioactivity in the shed, but it is presumed to be inside the building in small quantities. If beryllium is present, it could pose additional considerations during cleanup. The site is immediately adjacent to a residential neighborhood and is completely surrounded by occupied homes. The site was brought to the attention of the Environmental Protection Agency (EPA) Response and Prevention Branch (RPB) by the Texas Department of Health (TDH) in a telephone conversation between Mr. Bob Free and the On-Scene Coordinator (OSC), Pat Hammack, in March 2000.

2. Physical location

The Site is located at 715 Sunnyside Drive, Beaumont, Texas at the intersection of Forsyte and Sunnyside. The rough boundary of the Site consists of a fenced 5000 square foot area. The site is immediately adjacent to a residential neighborhood and is completely surrounded by occupied homes.

3. Site characteristics

The Little Bit Rad Site was used as a source storage area for the Little Bit Wireline Services company. It is a small building with residual internal and external contamination. The Little Bit Rad Site became contaminated when the operator stored a broken 3 curie americium-241 source that leaked the residual radiation and contaminated the site in 1995.

As a result of the improper storage operations performed at the site, wide-spread americium-241 soil contamination has been confirmed on the property. The official site area is fenced, but the contamination could migrate offsite with wind and rain and therefore unrestricted access to the public is possible.

In March 2000, U.S. EPA investigations were conducted to determine exposure levels associated with radiation at the site. Exposure and dose measurements were made using a Ludlum Model 43-89 Alpha Scintillation Probe and a Berkeley Nucleonics portable multichannel

analyzer Model SAM-335 with a 3 inch by 3 inch sodium iodide detector. The gamma radiation survey indicated areas in excess of 2000 micro roentgen per hour (uR/hr). National background concentrations in an uncontaminated area should have gamma readings between 10-15 uR/hr. Soil investigation at the site has indicated wide-spread americium-241 contamination within surface and subsurface soils onsite.

4. Releases or threatened release into the environment of a hazardous substance, pollutant or contaminant

Releases of americium-241 have contaminated the 5000 square foot area of residential property within Beaumont, Texas. Americium-241 is a radionuclide which is a listed hazardous substance as defined at Section 101(14) of CERCLA, 42 U.S.C. § 9601(14) and further defined at 40 CFR § 302.4.

5. NPL status

This Site is not presently on the National Priorities List (NPL). The State of Texas conducted an assessment at the site and due to the limited waste quantity, the small size of the facility, and limited targets, the site was removed from consideration for NPL ranking. However, should the site be ranked on the NPL in the future, the current removal actions are consistent with any remedial cleanup that might be taken due to the fact that the proposed actions constitute source removal measures.

6. Maps, Pictures and other graphic representations

Attachment 1: Site sketch & Site location map

Attachment 2: Oil & Hazardous Materials/Technical Assistance Database (OHM/TADS) Material Safety Data Sheets (MSDS) for Americium-241 and Beryllium

Attachment 3: State Letter Requesting Assistance

Attachment 4: Enforcement Addendum

B. Other Actions to Date

1. Previous actions

Previous actions taken by or directed by the State are listed below. EPA has taken no previous response actions at the Site.

2. Current actions

There are currently no actions taking place on the Site.

C. State and Local Authorities' Roles

1. State and local actions to date

The facility has been investigated by the TDH Bureau of Radiation Control since the broken source was stored at the location in 1995. After failed attempts to have the potentially responsible parties (PRP) clean the site, the TDH requested the EPA take over the site for final mitigation of the threat.

2. Potential for continued State/local response

In a April 25, 2000 letter to Charlie Gazda and Ragan Broyles, the Texas Natural Resource Conservation Commission (TNRCC) requested EPA assistance in the evaluation and possible response action associated with contamination at the Little Bit Rad Site. Additional response is expected by State and/or local officials at the site in the form of monitoring the site, technical assistance during the removal and community relations efforts (Attachment 3).

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

The current conditions at the Site meet the following factors listed in Section 300.415(b)(2) of the National Contingency Plan, 40 CFR § 300.415(b)(2), which indicate that the Site is a threat to the public health, welfare and the environment and a removal action is appropriate under Section 300.415(b)(1) of the National Contingency Plan, 40 CFR § 300.415(b)(1). Any or all of these factors may be present at a site yet any one of these factors may determine the appropriateness of a removal action.

1. Exposure to Human Populations, Animals or the Food Chain, NCP Section 300.415(b)(2)(i)

There is potential for exposure to human populations as a result of americium-241 contamination at the Little Bit Rad Site. Americium-241 is a radionuclide that emits ionizing radiation and has a half-life of 432 years. Ionizing radiation has the potential for being a carcinogen, mutagen, and/or teratogen, according to the Oil and Hazardous Materials/Technical Assistance Database (Attachment 2). Exposure of reproductive cells to ionizing radiation can cause gene mutations to occur in excess of the spontaneous mutation rate. Developmental defects have been observed in experimental animals exposed to ionizing radiation.

Human exposure can occur by one or more of the following mechanisms: 1) whole body tissue exposure from penetrating gamma radiation; 2) lung tissue exposure from alpha-particles due to the inhalation of americium-241 contaminated dust; and 3) digestive tract tissue exposure due to ingestion of americium-241 contaminated soil. Gamma radiation levels at the site have been found at over 2000 uR/hr, nearly 200 times background gamma radiation levels.

2. Contaminants in Soils, NCP Section 300.415(b)(2)(iv)

Elevated levels of americium-241 are located in surface soils throughout the site. Gamma radiation exposure can occur just by being in close proximity of the contaminated soils. Additionally, americium-241/beryllium contaminated dust may be incidentally inhaled and/or ingested by humans especially with the hand-to-mouth behavior of young children playing in the contaminated residential lot. Americium-241/beryllium contaminated soil can be tracked away from the site by animals enhancing the possibility of spreading the contamination to the human population.

3. Weather Conditions That May Cause the Release or Migration of Hazardous Substances, NCP Section 300.415 (b)(2)(v)

There is the potential of wind-borne migration of the dust containing elevated americium-241/beryllium concentrations. Texas is known for its windy and dusty conditions which can accelerate contaminant migration. Even though the external contamination has "weathered in" at this location there is still a potential threat of resuspension and transport of contamination offsite. Additional risk arises from the possibility of a structure fire. All or most of the contamination that is currently contained inside the building could become re-suspended and dispersed far beyond the current bounds of the site due to the normal high winds in the area.

4. Availability of Other Mechanisms, NCP Section 300.415 (b)(2)(vii)

The Potentially Responsible Party (PRP) was investigated by the State and was found not to have the resources to handle the removal. The EPA will follow up on the investigation to see if the PRP can perform the described action. The State and local officials do not have the resources available to address the current situation. The EPA will be the only mechanism available to respond to the imminent and substantial endangerment posed by the hazardous substances located at the site. If other mechanisms become available during the response action, the EPA will evaluate those mechanisms as appropriate.

B. Threats to the Environment

There are no known threats to the environment relative to the elevated hazardous substances located in at the site.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances, pollutants or contaminants from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

As discussed below, all of the actions to be taken on-site during this removal will comply with all applicable, or relevant and appropriate requirements (ARARs) to the extent practicable, considering the exigencies of the situation, and provide an effective mitigation of the imminent and substantial threats posed to the public health by the Site.

The proposed action involves the excavation and off-site disposal of all contaminated soil and building materials. All excavated areas will be backfilled with clean soil and brought back as close to their original contour and grade as practical. Clean soil is considered void of contaminants above background levels and will not constitute a health threat if used in a residential play area. Ground cover will be provided to the clean backfill area to stabilize the soil and prevent erosion.

Off-site disposal will be accomplished by sending all radioactive contaminated soils to an appropriate disposal facility. All hazardous substances, pollutants or contaminants removed off-site pursuant to this action for treatment, storage, or disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, pursuant to CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and the following rule: "Amendment to the National Oil and Hazardous Substances Pollution Contingency Plan; Procedures for Planning and Implementing Off-Site Response Action: Final Rule" 58 FR 49200 (September 22, 1993), and codified at 40 CFR § 300.440.

All containers to be sent off-site for disposal will be packaged and labeled in accordance with RCRA requirements found at 40 CFR §§ 262.30-32 and will be properly manifested in accordance with the requirements in 40 CFR §§ 262.20-23. All transportation will be in accordance with Department of Transportation rules and regulations. See generally 40 CFR§263.

Other requirements under the Occupational Safety and Health Act (OSHA) of 1970, 29 U.S.C. § 651 et seq., and under the laws of the State with plans approved under Section 18 of the State's OSHA laws, as well as other applicable safety and health requirements, will be followed. Federal OSHA requirements include, among other things, Hazardous Materials Operation, 20 CFR Part 1910, as amended by 54 Fed. Reg. 9317 (March, 1989), all OSHA General Industry (29 CFR Part 1910) and Construction (29 CFR Part 1926) standards wherever they are relevant, as well as OSHA record keeping and reporting regulations, and the EPA regulations set forth in 40 CFR Part 300, relating to the conduct of work at Superfund sites.

2. Contribution to remedial performance

The proposed action will eliminate the source material and is expected to complete all necessary actions at the Site.

3. Description of alternative technologies

There are no alternative technologies which could apply.

4. Applicable or relevant and appropriate requirements

The proposed removal action will be conducted to eliminate the actual or potential exposure to hazardous substances, pollutants or contaminants pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq., and in a manner consistent with the National Contingency Plan, 40 CFR Part 300, as required at 33 U.S.C. § 1321(c)(2) and 42 U.S.C. § 9605. As per 40 CFR Part 300.415(j), fund-financed removal actions under CERCLA § 106 shall, to the extent practicable considering the exigencies of the situation, attain the applicable or relevant and appropriate requirements under Federal environmental law.

Due to the fact that consolidation and off-site disposal are the principal elements of this removal action, RCRA waste analysis requirements found at 40 CFR §§ 261.20 and 261.30, RCRA manifesting requirements found at 40 CFR § 262.20, and RCRA packaging and labeling requirements found at 40 CFR § 262.30, are deemed to be appropriate requirements for this removal action. Ambient air quality standards at 40 CFR 50 will be used, as applicable, to protect the quality of air during the implementation of the action.

There are no regulatory cleanup standards directly applicable to the site. The site cleanup level for both the residential and commercial areas of the site are background.

5. Project Schedule

The project is expected to last approximately two months.

B. Estimated Costs

Extramural Costs

Cleanup Contractor	$250,000
US Army Corps of Engineers	100,000
Technical Assistance Contractor	60,000
TOTAL, EXTRAMURAL COSTS	$410,000

Intramural Costs

EPA Direct Costs	$65,000

EPA Indirect Costs	$120,000
TOTAL, INTRAMURAL COSTS	$285,000
20% Project Contingency	$135,000
TOTAL, REMOVAL PROJECT CEILING	$830,000

Cost estimates are based on special methods to clean up americium-241 and on the costs of preventing the spread of contamination to the neighborhood. Although lessons learned from previous actions have contributed to more efficient cleanup, other factors are rising costs.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If action is not taken at the Site, the residents and, in particular, the children playing in the yards will continue to be exposed to the gamma radiation and potentially americium-241 contaminated soil. As cited above, such exposure could possibly lead to adverse health effects including cancer.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues associated with this Site.

VIII. ENFORCEMENT

See Attachment 4.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Little Bit Rad Site, in Beaumont, Jefferson County, Texas, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at the Site meet the criteria as defined by 40 CFR Section 300.415(b)(2) of the NCP for a removal, and I recommend your approval of the proposed removal action. The total project ceiling is $830,000. Of this amount, an estimated $410,000 comes from the regional removal allowance.

APPROVED Pamela Phillips Acting DATE 8/3/2000

DISAPPROVED _____ DATE _____